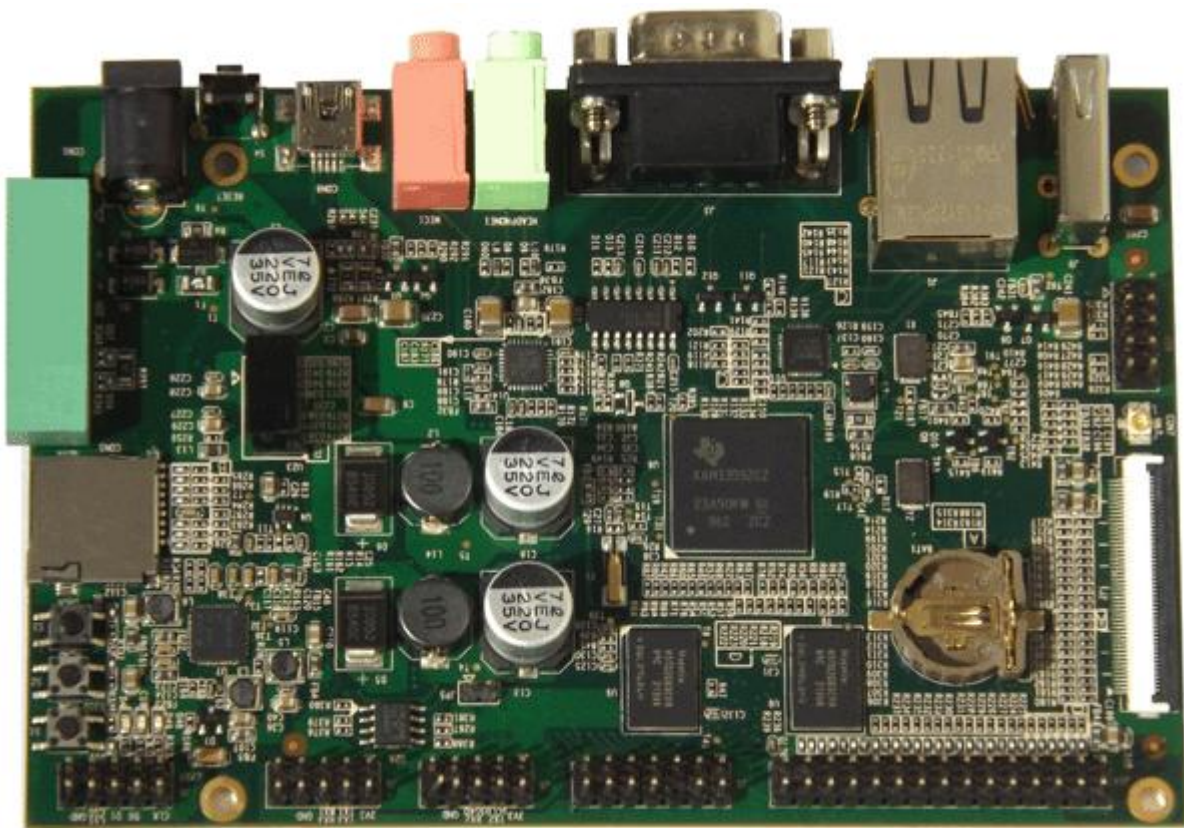# DevKit8600 AM3359 Evaluation Kit

Order#: DevKit8600 (T6030037 / T6010183)

720MHz TI's Sitara AM3359 ARM Cortex-A8 Microprocessor
- Onboard 512Mbytes of DDR3 SDRAM and 512Mbytes of NAND Flash
- UART, USB Host/OTG, Ethernet, CAN, RS485, WiFi/Bluetooth, TF, JTAG…
- LCD/TSP, Audio input/output
- Optional VGA, USB WiFi, Camera and 3G Modules
*- Supports for Linux 3.1.0, Android 2.3 and WinCE 7 OS*

DevKit8600 Evaluation Board

Embest DevKit8600 is a complete development platform for Texas Instruments' Sitara AM3359 ARM Cortex-A8 processor, it supports running high-level operating systems such as Linux, WinCE and Android which is a reliable and solid reference design and embedded product for development or applications such as Gaming Peripherals, Home and Industrial Automation, Consumer Medical Appliances, Printers, Smart Toll Systems, Connected Vending Machines, Weighing Scales, Educational Consoles and Advanced Toys.

The DevKit8600 Evaluation Board takes full features of the 720MHz AM3359 processor. It has 512MBytes of DDR3 SDRAM and 512Mbytes of NAND Flash on board. It has exposed rich hardware peripherals through connectors or headers including serial ports, USB Host, OTG, Ethernet, CAN, RS485, LCD/TSP, TF, WiFi//Bluetooth, Audio, ADC, SPI, I2C and JTAG. The Board is able to support Linux 3.1.0, Android 2.3 and WinCE7 OS. The software package includes the BSP and drivers of which many are in source code.

The DevKit8600 Evaluation Kit includes the DevKit8600 evaluation board and all necessary accessories to help users start their development. It is preloaded with Linux OS in NAND flash and WinCE OS in TF card. User can display the system by using a 4.3" or 7"TFT LCD and Touch screen. Embest provides user manual, schematic drawing, datasheet documents and software BSP to help customers better understand and use the kit. Besides, it is provided with Android 2.3 demo. Embest gives instructions on how to boot Android demo image from NAND flash or TF card.
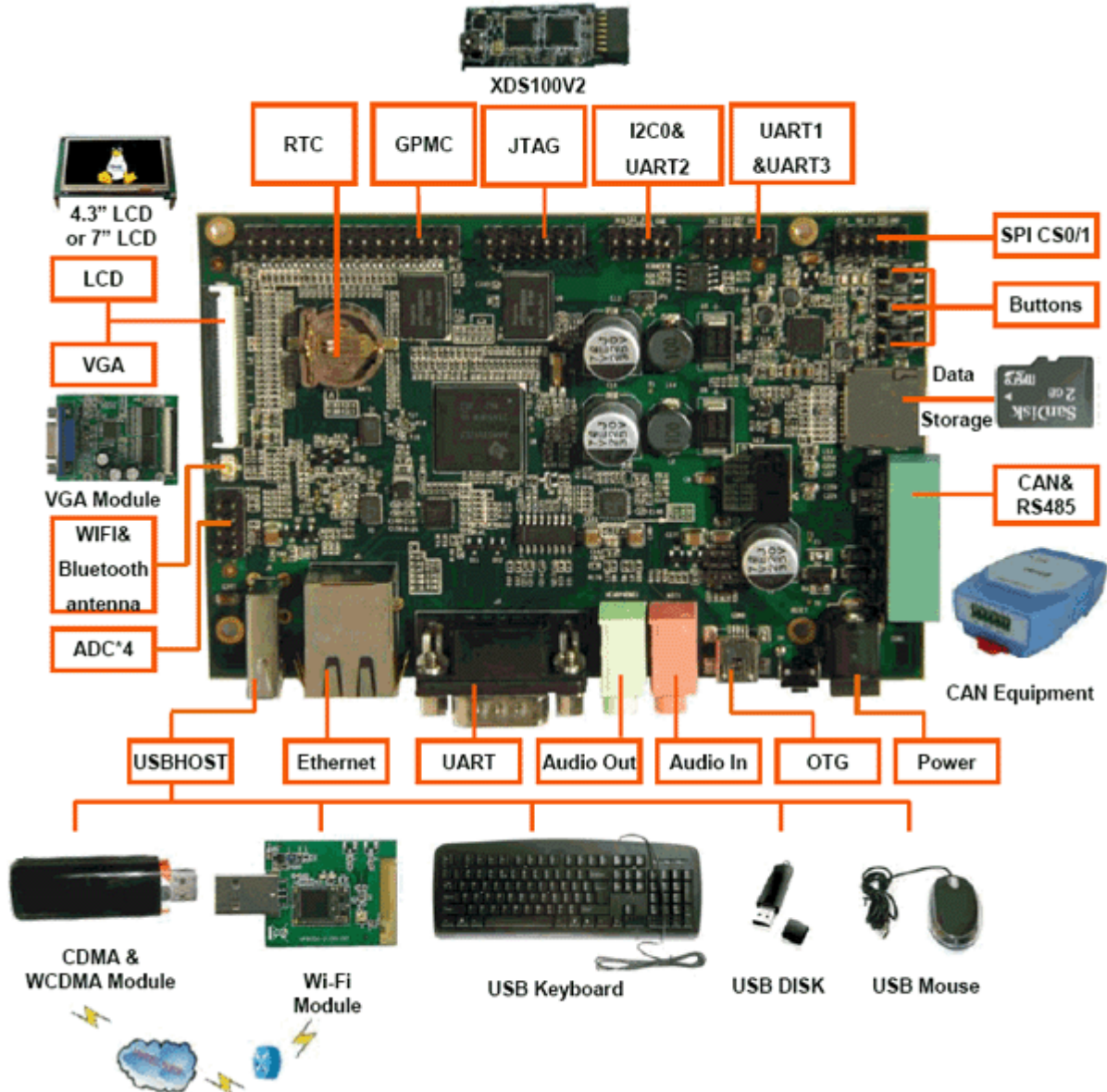
Note: The WiFi/BT module and 512MBytes Nand Flash is on rear of the DevKit8600 board

Hardware Features

Mechanical Parameters

-
    - Dimensions: 130mm x 80mm
    - Power Supply: +12V
    - Working Temp.: 0~70°C

Processor

-
    - **TI AM3359** ARM Cortex-A8 microprocessor

        - 720-MHz ARM Cortex-A8 32-bit RISC MPU

- NEON™ SIMD Coprocessor

- 32KB/32KB of L1 Instruction/Data Cache with Single-Error Detection (parity)

- 256KB of L2 Cache with Error Correcting Code (ECC)

- SGX530 Graphics Engine

- Programmable Real-Time Unit Subsystem

Memory and Storage

-
  - 512MBytes DDR3 SDRAM
  - 512MBytes NAND Flash
  - TF card slot

Data Transfer Interfaces

-
  - One 5 line Debug serial port, RS232 voltage (brings out by DB9 connector)
  - One 5 line serial port, TTL voltage (brings out by 2.0mm pitch 10-pin dip connector J6)
  - Two 3 line serial ports, TTL voltage (brings out by 2.0mm pitch 10-pin dip connector J5)
  - One RS485 serial port (brings out by 8-pin Phoenix Connector)
  - One USB2.0 OTG port with Integrated PHY, High-speed (Mini USB type)
  - One USB2.0 Host port with Integrated PHY, High-speed (USB-A type)
  - WiFi/Bluetooth Module (only support linux at present)
  - One CAN 2.0 interface (8-pin Phoenix Connector)
  - One 10/100/1000Mbps Ethernet interface (RJ45 connector)
  - One GPMC bus interface (brings out by 2.0mm pitch 30-pin dip connector J14)

Audio/Video Interfaces

-
  - One audio input interface (3.5mm audio jack)
  - One 2-channel audio output interface (3.5mm audio jack)
  - One TFT LCD interface / 4 line Resistive Touch Screen interface (50pin FPC connector)

Input/Output Interfaces and Other Facilities

-
  - Battery backed RTC (User needs to prepare battery himself, CR1220 model is ok)
  - One Reset button
  - Three User buttons (HOME, MENU, BACK)
  - One JTAG connector (2.54mm pitch 14-pin dip connector J7)
  - 4-channel ADC (brings out by 2.0mm 10-pin dip connector J10)
  - 1-channel SPI interface (brings out by 2.0mm 10-pin dip connector J8)
  - 1-channel I2C interfaces (brings out by 2.0mm 10-pin dip connector J6)

Add-on Hardware Options and Support OS

The DevKit8600 board takes full features of TI's AM3359 microprocessor and has exposed many hardware peripherals through connectors or headers. Embest has also designed various function modules to further enhance the performance of DevKit8600 board including VGA, USB WiFi, USB Camera, USB 3G (with

CDMA2000 or WCDMA standard) and LVDS modules, which are flexible for user selections to meet their own needs. More other modules are under development and will be released continuously.

Item	Description	Interface to Board	Linux	Android	WinCE
VGA8000	VGA Module	LCD	Support*	Support*	Support*
WF8000-U	WiFi Module	USB Host	Support*	Not yet	Not yet
CAM8100-U	Digital Camera Module	USB Host	Support*	Not yet	Not yet
CDMA8000-U	3G Module (CDMA2000 standard)	USB Host	Support*	Not yet	Not yet
WCDMA8000-U	3G Module (WCDMA standard)	USB Host	Support*	Not yet	Not yet
LVDS8000	LVDS Module	LCD	Support*	Support*	Support*
XDS100v2	Emulator for debugging	JTAG			

* = Provided with Source Code

 # = Not Provided with Source Code

Software Features

OS	Item		Remark
Linux	BIOS	SPL (First boot loader)	NAND
			MMC/SD
			FAT
		U-boot (Second boot loader)	NAND
			MMC/SD
			FAT
			NET
	Kernel	Linux-3.1.0	Supports ROM/CRAM/EXT2/EXT3/FAT/NFS/JFFS2/UBIFS file systems
	Drivers		Debug serial port, RTC, Ethernet, NAND Flash, TFT LCD, Touch screen, TF card, USB Device, USB host, Audio input/output, LED, Keypad, CAN, RS485, WiFi/Bluetooth
Android	Kernel	Linux-3.1.0	Gingerbread

Demo (do not provide source code)	Drivers	Debug serial port, RTC, Ethernet, NAND Flash, Touch screen, TF card, USB Device, USB host, Audio input/output, LED, Keypad, 2D/3D		
WinCE7	BIOS	X-loader (First boot loader)		NAND
				TF
		EBOOT (Second boot loader)		NAND
				TF
	OAL	OAL module		Boot parameter
				KILT (EMAC)
				Serial debug
				REBOOT
				Watchdog
				RTC
				Kernel profiler
				System timer
				Interrupt controller
				MMU
	Drivers	Debug serial port, RTC, Ethernet, NAND Flash, TFT LCD, Touch screen, TF card, USB Device, USB host, Audio input/output, RS485, NLED, Keypad, PRU		
		PowerVR (2D/3D) DDK & SDK		
	APP	Application module		Flash Player plug-in and Flash player